

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 89-230

WASTE DISCHARGE REQUIREMENTS
FOR
COUNTY OF SISKIYOU
AND U.S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE
BLACK BUTTE CLASS III LANDFILL
SISKIYOU COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The County of Siskiyou (hereafter Discharger) submitted a Report of Waste Discharge, dated 9 February 1987; a site evaluation and basic monitoring data report, dated 8 January 1987; a solid waste water quality assessment test (SWAT) report, dated June 1988; a five-year engineered report, dated 9 April 1987; and supplemental chemical and site information submitted from 20 March 1987 through 27 February 1989.
2. The Report of Waste Discharge requests revised waste discharge requirements for reclassification of an existing Class II-2 landfill to a Class III landfill waste management unit (WMU). The WMU is currently regulated by Waste Discharge Requirements Order No. 74-311, which no longer conforms with the California Code of Regulations (CCR), Title 23, Chapter 3, Subchapter 15 (hereafter Subchapter 15).
3. The 60-acre disposal site, comprised of Assessor's Parcel No. 21-60-050, is owned by the U.S. Department of Agriculture, Forest Service, (hereafter Discharger) and is operated by the Siskiyou County Department of Public Works (hereafter Discharger). Waste disposal activities are currently limited to 40 acres of the site. The site is 3 miles northwest of the City of Mt. Shasta in Section 32, T41N, R4W, MDB&M, as shown on Attachment "A" which is incorporated herein and made part of this Order.
4. The disposal site consists of a landfill (WMU No. 1), two unlined surface impoundments for septage (WMU No. 2), and an area used by the City of Dunsmuir to dry wastewater treatment plant sludge (WMU No. 3), as shown on Attachment "B" which is incorporated herein and made part of this Order.
5. This is an existing facility, first operated by Siskiyou County in 1969. The Discharger plans to discharge solid wastes at the site until the year 1998. The total capacity of the landfill is estimated at 1,500,000 cubic yards. The remaining capacity is estimated at 240,000 cubic yards.
6. The Discharger plans to continue short-term stockpiling of car bodies, large metal items, and white goods. Salvage operators remove the car bodies, metal, and white goods for recycling off-site.

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WASTES AND THEIR CLASSIFICATION

7. The Discharger proposes to continue to discharge municipal solid waste and inert waste for disposal in a Class III landfill unit, as shown on Attachment "B". These wastes have been classified as 'nonhazardous solid waste' or 'inert waste', respectively, using the criteria set forth in Subchapter 15. The site currently receives approximately 52 cubic yards of refuse daily. The area served by the landfill is southern Siskiyou County which includes the Cities of Dunsmuir and Mt. Shasta.
8. The Discharger accepts 50,000 gallons per month of septic tank pumpings (septage) to two 7,500-square-foot unlined ponds. The ponds are rotated monthly to provide adequate disposal and drying of the septage waste. Once dry, the ponds are disked in preparation for use. A complete waste characterization has not been performed; therefore, these wastes have not been classified.
9. Domestic sewage sludge from the Dunsmuir sewage treatment plant is discharged to two sludge-drying areas adjacent to the septage ponds on an as-needed basis. The area is used primarily in the summer. Analysis of the sludge, when dry, indicates it is a 'nonhazardous solid waste'.

DESCRIPTION OF THE SITE

10. The facility is 3.5 miles northwest of the City of Mt. Shasta and adjacent to the southeast base of Black Butte, a cinder cone. The landfill is southwest of the mouth of a southwesterly-trending canyon with steep slopes on the east, steep to moderate slopes on the west, and moderate slopes on the north. There are no defined drainages on the site because of the pervious volcanic soils. Designated fill areas are terraced in the central portion of the site. Site elevations range from 3,850 to 3,980 feet mean sea level (MSL).
11. Land within 1,000 feet of this site is vacant forestland in public and private ownership with the nearest residence and water well one-half mile to the west.
12. Surface soils consist of Deetz gravelly, stoney, loamy sand which is the uppermost lithologic unit of recent pyroclastic flows and landslide deposits of unconsolidated porphyritic hornblende dacite clasts. The clasts are loosely consolidated, predominantly sand to boulder size, slightly to very poorly sorted, angular, and ranging in color from dark red to light gray. This formation is at least 160 feet thick and exhibits permeability rates of 4.2×10^{-3} centimeters/second to 1.4×10^{-2} centimeters/second.

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13. The pyroclastic/landslide deposit is underlain by quaternary lava flows and breccias of the high cascade volcanic series and tertiary volcanic deposits of the western cascade volcanic series. The western cascade deposits are at least several hundred feet below the site and are composed of interbedded lava flows and tuff deposits.
14. No faults have been identified within one mile of the landfill. The nearest fault is approximately 3.6 miles southwest of the landfill site and is a prequaternary fault, showing no evidence of movement within the last two million years.
15. Two steam vents are on the eastern slopes above the landfill. These vents are small, 20 feet apart, and are situated approximately 250 feet south-southwest of monitoring well OB-2A, as shown on Attachment "B".
16. The water-bearing formation ranges from 30 to 70 feet below the base of WMU No. 1. The hydraulic gradient is from east-northeast to west-southwest, with a slope of about 3 percent. Ground water flows at approximately 14 feet per day. The ground water occurs under unconfined water table conditions. There are no known separate, distinct, perched, or confined water-bearing zones within the unconsolidated deposits beneath the site. The quality of this water is excellent with total dissolved solids (TDS) upgradient ranging between 70 to 95 mg/l, while TDS downgradient ranges from 165 to 225 mg/l.
17. The ground water monitoring system currently consists of two upgradient wells designated OB-2A and OB-4M and two downgradient wells designated OB-1 and OB-3A, as shown on Attachment "B". A monitoring well designated "Entrance Well" was installed on 8 October 1974 and has been sampled quarterly since 5 December 1974. Due to the construction characteristics of the entrance well, it is not appropriate to continue to use it as a monitoring well.
18. The beneficial uses of the ground water are domestic, municipal, industrial, and agricultural supply.
19. The site receives an average of 37 inches of precipitation per year as measured at Mt. Shasta between the years 1941 and 1976. The mean evaporation for this site is 35 inches per year. Based on these data, the annual net evaporation at the site is -2 inches. Much of the precipitation falls during the winter months as snow. The average daily maximum/minimum temperature ranges from 42°/26°F in January to 85°/51°F in July.

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20. The 1,000-year, 24-hour precipitation event for the site is 8.42 inches and the 100-year, 24-hour precipitation event is 6.67 inches as calculated from information in Department of Water Resources Bulletin No. 195, "Rainfall Analysis for Drainage Design".
21. The site is not within a 100-year floodplain.
22. Surface water drainage is to Wagon Creek, a tributary of the Sacramento River. The beneficial uses of Wagon Creek and the Sacramento River are municipal, industrial, and agricultural supply; recreation; esthetic enjoyment; navigation; ground water recharge; freshwater replenishment; hydroelectric power generation; and preservation and enhancement of fish, wildlife, and other aquatic resources.
23. The Discharger's data demonstrate the site does not meet the siting criteria in Subchapter 15. The natural geologic material between the base of the Class III landfill unit and ground water does not prevent the impairment of beneficial uses of ground water from the discharge of 'nonhazardous solid waste' to the landfill unit. Therefore, any lateral expansion of the landfill outside WMU No. 1 must be lined with a composite liner or an equivalent engineered liner. The liner must be overlain by a leachate collection and removal system (LCRS).

IMPOUNDMENTS

24. The existing WMU Nos. 2 and 3 are unlined ponds constructed in natural geologic materials that do not provide the necessary isolation of waste from waters of the state. Therefore, they do not meet the siting requirements of Section 2532 of Subchapter 15 for Class II surface impoundments. The continued operation of these ponds may impair beneficial uses of ground water from the discharge of liquid waste to the WMUs. Therefore, closure or retrofitting of these WMUs is necessary.
25. In accordance with Section 2532(b)(4) of Subchapter 15, the Discharger may propose to retrofit the surface impoundments with a liner system which complies with the applicable provisions of Article 4 of Subchapter 15. Such a liner system would eliminate the requirement that the surface impoundments be located in natural geologic materials which have a permeability of not more than 1×10^{-8} centimeters/second and which are of sufficient thickness to prevent vertical movement of fluid, including waste and leachate, from the WMUs to waters of the state.
26. These waste discharge requirements allow the Discharger to propose an engineered alternative or to retrofit in accordance with Section 2532(b)(4) before initiating closure.

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CERTIFICATION

27. None of the WMUs at this facility have been certified as being in compliance with the construction requirements of Subchapter 15.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) CONSIDERATIONS

28. The action to revise the waste discharge requirements for this landfill is exempt from the provisions of CEQA (Public Resources Code Section 21000, et seq.), in accordance with Title 14, Section 15301, CCR.

OTHER LEGAL REFERENCES

29. The Water Quality Control Plan for the Sacramento River, Sacramento-San Joaquin Delta, and San Joaquin River Basin (5A, 5B, and 5C) was adopted on 25 July 1975. This Order implements the water quality objectives stated in that Plan. Furthermore, this Order implements the prescriptive standards and performance goals of Subchapter 15, effective 27 November 1984.
30. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
31. The Board has notified the Discharger and interested agencies and persons of its intent to revise the waste discharge requirements for this facility.
32. In a public meeting, the Board heard and considered all comments pertaining to this facility and discharge.

IT IS HEREBY ORDERED that Order No. 74-311 be rescinded and the County of Siskiyou and the U.S. Department of Agriculture, Forest Service, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. Prohibitions

1. The discharge of 'hazardous waste' and 'designated waste' at this site is prohibited. For the purposes of this Order, the terms 'hazardous waste' and 'designated waste' are as defined in Subchapter 15.

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2. The discharge of liquid or semisolid waste (i.e., waste containing less than 50-percent solids) to WMU No. 1 is prohibited.
3. The discharge to WMU No. 1 of solid waste containing free liquid or moisture in excess of the waste moisture-holding capacity is prohibited.
4. The discharge of liquid or semisolid waste (i.e., septage pumpings and wastewater treatment plant sludge) to the existing unlined WMU Nos. 2 and 3 after 1 July 1993 is prohibited.
5. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or ground water is prohibited.
6. The discharge of waste from the surface impoundments is prohibited.
7. The discharge of waste to ponded water from any source is prohibited.
8. The discharge of waste within 100 feet of surface waters is prohibited.
9. The discharge of wastes that have the potential to reduce or impair the integrity of containment structures or which, if commingled with other wastes in the unit, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products which, in turn,:
 - a. require a higher level of containment than provided by the unit,
 - b. are restricted hazardous wastes, or
 - c. impair the integrity of containment structuresis prohibited.
10. The use of additional capacity through lateral expansion of the landfill outside of WMU No. 1 before placement of an approved liner and LCRS is prohibited.

B. Discharge Specifications

GENERAL SPECIFICATIONS

1. Wastes shall be discharged only into WMUs specifically designed for their containment and/or treatment as stated in Finding No. 4 of this Order and as shown on Attachment "B", a part of this Order.

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2. The discharge of liquid and semisolid wastes to WMU No. 2 ponds is limited to septage pumping and to WMU No. 3 ponds is limited to Dunsmuir's wastewater treatment plant sludge until 1 July 1993 when the discharge must cease. The sludges must be removed and the ponds closed or retrofitted in accordance with Section 2532(b)(4) by 1 October 1993. Closure of these ponds may be required at an earlier date if ground water monitoring indicates the WMU is affecting the beneficial uses of ground water.
3. Waste materials shall be confined to the WMUs as shown on Attachment "B".
4. Wastes shall not be discharged below 3,850 feet MSL.

General WMU Construction

5. Materials used to construct liners shall have appropriate physical and chemical properties to ensure containment of discharged wastes over the operating life, closure, and post-closure maintenance period of the WMUs.
6. Clay liners and landfill caps shall have a maximum hydraulic conductivity of 1×10^{-8} centimeters/second and a minimum relative compaction of 90 percent. Hydraulic conductivities of liner materials shall be determined by laboratory tests using solutions with similar properties as the fluids that will be contained. Hydraulic conductivities of cap materials shall be determined by laboratory tests using water. Hydraulic conductivities determined through laboratory methods shall be confirmed by field testing of the finished liner using a method approved by the Regional Board. Construction methods and quality assurance procedures shall be sufficient to ensure that all parts of the liner and cap meet the hydraulic conductivity and compaction requirements.
7. Materials used to construct LCRSs shall have appropriate physical and chemical properties to ensure the required transmission of leachate over the life of the WMUs.
8. LCRSs shall be designed, constructed, and maintained to collect twice the anticipated daily volume of leachate generated by the WMU and to prevent the buildup of hydraulic head on the underlying liner or underlying natural geologic materials of low hydraulic conductivity at any time.
9. If the Discharger proposes an engineered alternative to the construction or prescriptive requirements of Subchapter 15, then the Discharger must demonstrate that the construction or prescriptive standard is not feasible and

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the proposed engineered alternative is consistent with the performance goal addressed by the particular construction or prescriptive standard and affords equivalent protection against water quality impairment.

Supervision And Certification Of Design And Construction

10. All containment structures shall be designed, constructed, retrofitted, or closed under the direct supervision of a California registered civil engineer or a certified engineering geologist, and shall be certified by that individual as meeting the prescriptive standards and performance goals of Subchapter 15 prior to waste discharge.

Water Quality Protection Standards

11. The concentrations of indicator parameters or waste constituents in waters passing through the points of compliance shall not exceed the "water quality protection standards" established pursuant to and enumerated in Monitoring and Reporting Program No. 89-230, which is attached to and made part of this Order.

Protection From Storm Events

12. WMUs shall be designed, constructed, and operated to prevent inundation or washout due to floods with a 100-year return period. Class II surface impoundments and related containment structures shall be constructed and maintained to prevent, to the greatest extent possible, inundation, erosion, slope failure, washout, and overtopping under 1,000-year, 24-hour precipitation conditions, and shall be designed to contain the 100-year wet season precipitation without using the required two feet of freeboard. The Class III landfill unit and related containment structures shall be constructed and maintained to prevent, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, or washout by the 100-year, 24-hour precipitation conditions.
13. Precipitation and drainage control systems shall be designed and constructed to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 1,000-year, 24-hour precipitation conditions, as described in Finding No. 20 above.
14. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes.

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15. Annually, prior to the anticipated rainy season but no later than 30 October, any necessary erosion control measures shall be implemented and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the facility and to prevent surface drainage from contacting or percolating through wastes.
16. Water used for site maintenance shall be limited to the minimum amount necessary for dust control.
17. The Discharger shall remove and relocate any wastes discharged at this site in violation of this Order.

LANDFILL SPECIFICATIONS

18. During the rainy season, when precipitation can be expected, a minimum one-foot thickness of low-permeability cover shall be maintained over all but the active disposal area of the landfill. The active disposal area shall be confined to the smallest area practicable based on the anticipated quantity of waste discharge and other disposal site operations.
19. Methane and other landfill gases shall be adequately vented, removed from the landfill unit, or otherwise controlled to prevent the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water due to migration through the vadose (unsaturated) zone.

SURFACE IMPOUNDMENT SPECIFICATIONS

20. Surface impoundment WMU Nos. 2 and 3 shall be retrofitted as feasible to meet the construction standards of Article 4 of Subchapter 15, or shall be closed in accordance with Article 8 of Subchapter 15.

WMU CLOSURE SPECIFICATIONS

21. The closure of each WMU shall be under the direct supervision of a California registered civil engineer or certified engineering geologist.

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22. Closed WMUs shall be provided with at least two permanent monuments, installed by a licensed land surveyor or a registered civil engineer legally qualified to perform land surveying work, from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period.

Landfill Closure

23. At closure, each landfill unit shall receive a final cover which is designed and constructed to function with minimum maintenance. In accordance with Section 2581 of Subchapter 15, the final landfill cap shall have a structural cross-section with the following minimum components:
 - a. Two-foot-thick foundation layer compacted to the maximum density obtainable at optimum moisture content using methods that are in accordance with accepted civil engineering practice. The foundation layer may contain waste materials.
 - b. A one-foot-thick clay liner compacted to attain a permeability of 1×10^{-6} centimeters/second or less shall be placed over the foundation layer.
 - c. A one-foot-thick vegetative soil layer will be placed over the clay layer.

An engineered equivalent final landfill cap can be proposed for approval by the Board pursuant to Subsection 2510(b) and (c) of Subchapter 15 in place of the above minimum components.

24. Vegetation shall be planted and maintained over each closed landfill unit. Vegetation shall be selected to require a minimum of irrigation and maintenance, and shall have a rooting depth not in excess of the vegetative layer thickness.
25. Closed landfill units shall be graded to at least a three-percent grade and maintained to prevent ponding.
26. Areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion.

Surface Impoundment Closure

27. At closure of surface impoundments, all residual wastes, including liquids, sludges, precipitates, settled solids, liner materials, and adjacent natural geologic materials contaminated by wastes, shall be completely removed and discharged to a WMU approved by the Board (in accordance with Section 2582 of Subchapter 15).

C. Provisions

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.
2. The Discharger shall maintain a copy of this Order at the site and make it available at all times to site operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.
3. The Discharger shall submit a report by 1 July 1990 indicating the permeabilities that can be achieved from on-site soils to determine compliance with Discharge Specification B.18. The report shall also specify the depth of cover needed to minimize percolation of precipitation through wastes. The final permeabilities and depth of winter cover shall be approved by the Executive Officer.
4. The Discharger shall notify the Board in writing 180 days prior to or as soon as the Discharger has knowledge of any proposed change in ownership or responsibility for construction or operation of the WMUs. The Discharger shall also notify the Board of any material change in the character, location, or volume of the waste discharge and of any proposed expansions or closure plans. This notification shall be given 180 days prior to the effective date of the change and shall be accompanied by an amended Report of Waste Discharge and any technical documents that are needed to demonstrate continued compliance with these waste discharge requirements.
5. The Discharger shall comply with Monitoring and Reporting Program No. 89-230 which is attached to this Order.
6. The Discharger shall maintain legible records of the volume and type of each waste discharged at each WMU, and the manner and location of discharge. Such records shall be maintained at the site until the beginning of the post-closure

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maintenance period. These records shall be available for review by representatives of the Board and of the State Water Resources Control Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Regional Board.

7. Within 180 days of the adoption of these requirements, the Discharger shall submit to the Board and to the Department of Health Services, for approval, a report describing a periodic load-checking program to be implemented by the Discharger to ensure that 'hazardous wastes' and 'designated wastes' are not discharged to the Class III landfill unit or the unclassified surface impoundments.
8. If the Discharger or the Board, through a detection monitoring program, finds there is a statistically significant increase in indicator parameters or waste constituents over the water quality protection standards (established pursuant to Monitoring and Reporting Program No. 89-230) at or beyond the points of compliance, the Discharger shall notify the Board or acknowledge the Board's finding in writing within 7 days, and shall immediately resample for the constituent(s) or parameter(s) at the point where the standard was exceeded. Within 90 days, the Discharger shall submit to the Board the results of the resampling and either:
 - a. a report demonstrating the water quality protection standard was not, in fact, exceeded; or
 - b. an amended Report of Waste Discharge for the establishment of a verification monitoring program, per Section 2557 of Subchapter 15, which is designed to verify that water quality protection standards have been exceeded and to determine the horizontal and vertical extent of pollution.
9. If the Discharger, through a verification monitoring program, or the Board verifies that water quality protection standards have been exceeded at or beyond the points of compliance, the Discharger shall notify the Board or acknowledge the Board's finding in writing within 7 days. Within 180 days, the Discharger shall submit to the Board an amended Report of Waste Discharge for the establishment of a corrective action program, per Section 2558 of Subchapter 15, which is designed to achieve compliance with the water quality protection standards.
10. The Discharger, or persons employed by the Discharger, shall comply with all notice and reporting requirements of the State Department of Water Resources with regard to the construction, alteration, destruction, or abandonment of

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all monitoring wells used for compliance with this Order or with Monitoring and Reporting Program No. 89-230, as required by Sections 13750 through 13755 of the California Water Code.

11. The Discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or of precipitation and drainage control structures.
12. Within one year of the adoption of these requirements, the Discharger shall submit to the Board for approval a preliminary closure and post-closure maintenance plan describing the methods and controls to be used to assure protection of the quality of surface and ground waters of the area during final operations and during any proposed subsequent use of the land. The plan must include:
 - a. an estimate of closure and post-closure maintenance costs,
 - b. a proposal for a trust fund or equivalent financial arrangement to provide sufficient funding for closure and post-closure maintenance, and
 - c. the amount to be deposited in the trust fund or equivalent financial arrangement each year.

This plan shall be prepared by or under the supervision of a California registered civil engineer or certified engineering geologist, updated annually, and submitted to the Board by the **15th day of January** of each year. The method used to close each WMU at the facility and maintain protection of the quality of surface and ground waters shall comply with waste discharge requirements established by the Board and the most current version of the closure and post-closure maintenance plan which has been approved by the Board. The final report shall be submitted at least **180 days** prior to final closure of the facility. In order to avoid duplication or the preparation of separate closure plans, the Board's requirements for closure may be incorporated into the overall closure plan prepared under Section 66796.22 of the Government Code.

13. The Discharger shall maintain waste containment facilities and precipitation and drainage controls, and shall continue to monitor ground water, leachate from the landfill unit, and surface waters per Monitoring and Reporting Program No. 89-230 throughout the post-closure maintenance period.
14. The post-closure maintenance period shall continue until the Board determines that remaining wastes in all WMUs will not threaten water quality.

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15. The Discharger shall comply with the Standard Provisions and Reporting Requirements, dated 1 September 1985, which are hereby incorporated into this Order.
16. The owner of the waste management facility shall have the continuing responsibility to assure protection of usable waters from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and post-closure maintenance period of the WMUs and during subsequent use of the property for other purposes.
17. In the event of any change in ownership of this waste management facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Board.
18. The Discharger shall comply with all applicable provisions of Subchapter 15 that are not specifically referred to in this Order.
19. The Board will review this Order periodically and may revise waste discharge requirements when necessary.

I, WILLIAM H. CROOKS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 8 December 1989.



WILLIAM H. CROOKS, Executive Officer

GDD:gln

Revised 11/8/89

Attachments

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
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MONITORING AND REPORTING PROGRAM NO. 89-230
FOR

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NONHAZARDOUS SOLID WASTE MONITORING

The Discharger shall monitor all wastes discharged to the Class III landfill unit on a monthly basis and report to the Board as follows:

<u>Parameter</u>	<u>Report in Units of</u>	<u>Frequency of Reporting</u>
Quantity discharged	cubic yards	Quarterly
Type of material discharged	--	Quarterly
Source(s) of material discharged	--	Quarterly
Minimum elevation of discharge	feet, MSL	Quarterly
Capacity of landfill unit	percent	Annually

LIQUID AND SEMISOLID WASTE MONITORING

The Discharger shall monitor all wastes discharged to the existing septage ponds and the Dunsmuir sludge-drying and disposal area on a weekly basis, and report to the Board as follows:

<u>Parameter</u>	<u>Report in Units of</u>	<u>Frequency of Reporting</u>
Quantity discharged	gallons	Quarterly
Type of material discharged	--	Quarterly
Source of material	--	Quarterly
Minimum freeboard	feet & tenths	Quarterly

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The following shall constitute the monitoring for liquid wastes:

<u>Parameter/Constituent</u>	<u>Report in Units of</u>	<u>Sampling Frequency</u>
pH	pH units	Monthly
Specific Conductance	umhos/cm	Monthly
Chlorides	mg/l	Semiannually
Total Dissolved Solids	mg/l	Semiannually
Formaldehyde	mg/l	Yearly
Fluoride	mg/l	Yearly
Volatile Organics	mg/l or ug/l	Yearly
Base/Neutral and Acid Extractables	mg/l or ug/l	Yearly
Iron	mg/l or ug/l	Yearly
Cadmium	mg/l or ug/l	Yearly
Chromium	mg/l or ug/l	Yearly
Lead	mg/l or ug/l	Yearly
Zinc	mg/l or ug/l	Yearly
Cyanide (Total)	mg/l or ug/l	Yearly

Environmental Protection Agency (EPA) Method 624 shall be used to determine volatile organics. Method 625 shall be used to determine base/neutral and acid extractables.

Prior to disposal of sludges and solids from the ponds, the following analyses shall be performed:

<u>Parameter</u>	<u>Report in Units of</u>
Volatile Organics (EPA Method 8240)	mg/l or ug/l
Semivolatile Organics~(EPA Method 8270)	mg/l or ug/l
Phenols (EPA Method 8040)	mg/l or ug/l
CAM Metals	mg/l or ug/l

GROUND WATER MONITORING

The following detection monitoring program shall be implemented at the facility to determine both background and downgradient concentrations of indicator parameters. The monitoring network shall consist of "background" monitoring wells OB-2A and OB-4

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and downgradient monitoring wells OB-1 and OB-3A, and shall constitute the "points of compliance" with respect to ground water. The locations of these wells are shown on Attachment "B". The following shall be measured when sampling ground water:

<u>Parameter/Constituent</u>	<u>Report in Units of</u>	<u>Sampling Frequency</u>
Chemical Oxygen Demand	mg/l	Quarterly
Specific Conductance	umhos/cm	Quarterly
pH	pH units	Quarterly
Total Dissolved Solids	mg/l	Quarterly
Dissolved Organic Carbon	mg/l	Quarterly
Chlorides	mg/l	Quarterly
Sulfates	mg/l	Quarterly
Dissolved Iron ¹	mg/l	Quarterly
Total Kjeldahl Nitrogen	mg/l	Quarterly
Sulfides (including H ₂ S)	presence or absence	Quarterly
Nitrates	mg/l	Quarterly
Calcium	mg/l	Quarterly
Magnesium	mg/l	Quarterly
Sodium	mg/l	Quarterly
Iron	mg/l	Quarterly
Potassium	mg/l	Quarterly
Alkalinity (Bicarbonate and Carbonate)	mg/l	Quarterly
Turbidity	NTUs	Quarterly
Volatile Organics ²	ug/l	Annually
Aluminum ¹	mg/l	Annually
Arsenic	mg/l	Annually
Cadmium ¹	mg/l	Annually
Total Chromium (III+VI) ¹	mg/l	Annually
Chromium (VI)	mg/l	Annually
Copper ¹	mg/l	Annually
Lead ¹	mg/l	Annually
Manganese ¹	mg/l	Annually
Mercury	mg/l	Annually
Nickel ¹	mg/l	Annually
Selenium	mg/l	Annually
Silver ¹	mg/l	Annually
Thallium ¹	mg/l	Annually
Zinc ¹	mg/l	Annually

¹ Inductively Coupled Argon Plasma Atomic Emission Spectroscopy (ICAP) may be used for analysis of these constituents only.

² EPA Methods 601 and 602, or EPA Method 624 shall be used. All peaks shall be reported.

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The ground water surface elevation (in feet and hundredths, MSL) in all wells shall be measured on a monthly basis and used to determine the velocity and direction(s) of ground water flow.

WATER QUALITY PROTECTION STANDARDS

Quarterly samples shall be taken from well OB-1 for one year and analyzed for each of the parameters and constituents listed under "GROUND WATER MONITORING" above. Each time OB-1 is sampled, a minimum of four discrete samples shall be taken for analysis of each parameter/constituent from the entire system used to determine background water quality. Analyses shall account for measurement errors in sampling and analysis. Data from these analyses shall be reported to the Board by **1 January 1991** for use by the Board in determining water quality protection standards for surface waters at the site.

If subsequent upstream surface water sampling indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of these water quality protection standards.

STATISTICAL PROCEDURES FOR DETERMINING SIGNIFICANT INCREASES

The significance of increases in indicator parameters and waste constituents over water quality protection standards shall be established through the use of the statistical procedures described in Section 2555(h) of Subchapter 15.

REPORTING

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements.

Quarterly monitoring reports shall be submitted to the Board by the **15th day** of the following month, the month in which the samples were taken. Quarterly, semiannually, and yearly monitoring reports shall be submitted to the Board by the **15th day** of the month following the calendar quarter in which the samples were taken or observations made.

The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Board.

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A report shall be submitted to the Board by 30 January of each year containing both tabular and graphical summaries of the monitoring data obtained during the previous year. The report shall include a discussion of compliance with the waste discharge requirements.

The Discharger shall implement the above monitoring program on the effective date of this Order.

Ordered by William H. Crooks
WILLIAM H. CROOKS, Executive Officer

8 December 1989

(Date)

GDD:gln

Revised 11/8/89

INFORMATION SHEET

COUNTY OF SISKIYOU
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Siskiyou County's Black Butte Landfill is three miles northwest of the City of Mt. Shasta on land owned by the U.S. Forest Service. The landfill is operated by the County through a contract operator.

The landfill was first operated in 1969. The site serves the south County area which includes the Cities of Mt. Shasta and Dunsmuir. The site has a total capacity of 1,500,000 cubic yards and a remaining capacity estimated at 240,000 cubic yards. The Discharger plans to operate the site as is until 1998.

The landfill is situated in a southwesterly-trending canyon at the foot of Black Butte Cinder Cone. The site is situated on volcanic formations caused by pyroclastic flows and landslide deposits. Surface soils are so extremely pervious that there are no defined drainage facilities at the site. Ground water is 30 to 70 feet below the lowest elevation of the existing fill and is of excellent quality.

The landfill currently accepts 52 cubic yards of nonhazardous solid waste and inert waste daily. In addition, 50,000 gallons of septage waste are deposited into two unlined, unclassified ponds and an unknown quantity of wastewater treatment plant sludge from the City of Dunsmuir to a disposal area. Once the sludge is dry, it is considered a nonhazardous solid waste. Continued operation of these unlined WMUs may impair beneficial uses of the ground water.

A geologic study completed in January 1987 found the site to be on "loose porphyritic hornblende dacite clasts which are very poorly to slightly sorted, angular, and ranging in color from dark red to light gray, with no associated observable change in composition." This allows rapid infiltration of rainfall. The rainfall also infiltrates through the refuse, thereby offering the potential for generation of leachate. This condition does not assure protection of the high quality ground water found immediately (70 feet) below the site.

The current ground water monitoring system consists of two upgradient and two downgradient wells. The geologic study, completed in 1987, reveals the direction of flow of the ground water is east-northeast to west-southwest. The monitoring wells appear to be in the most appropriate position.

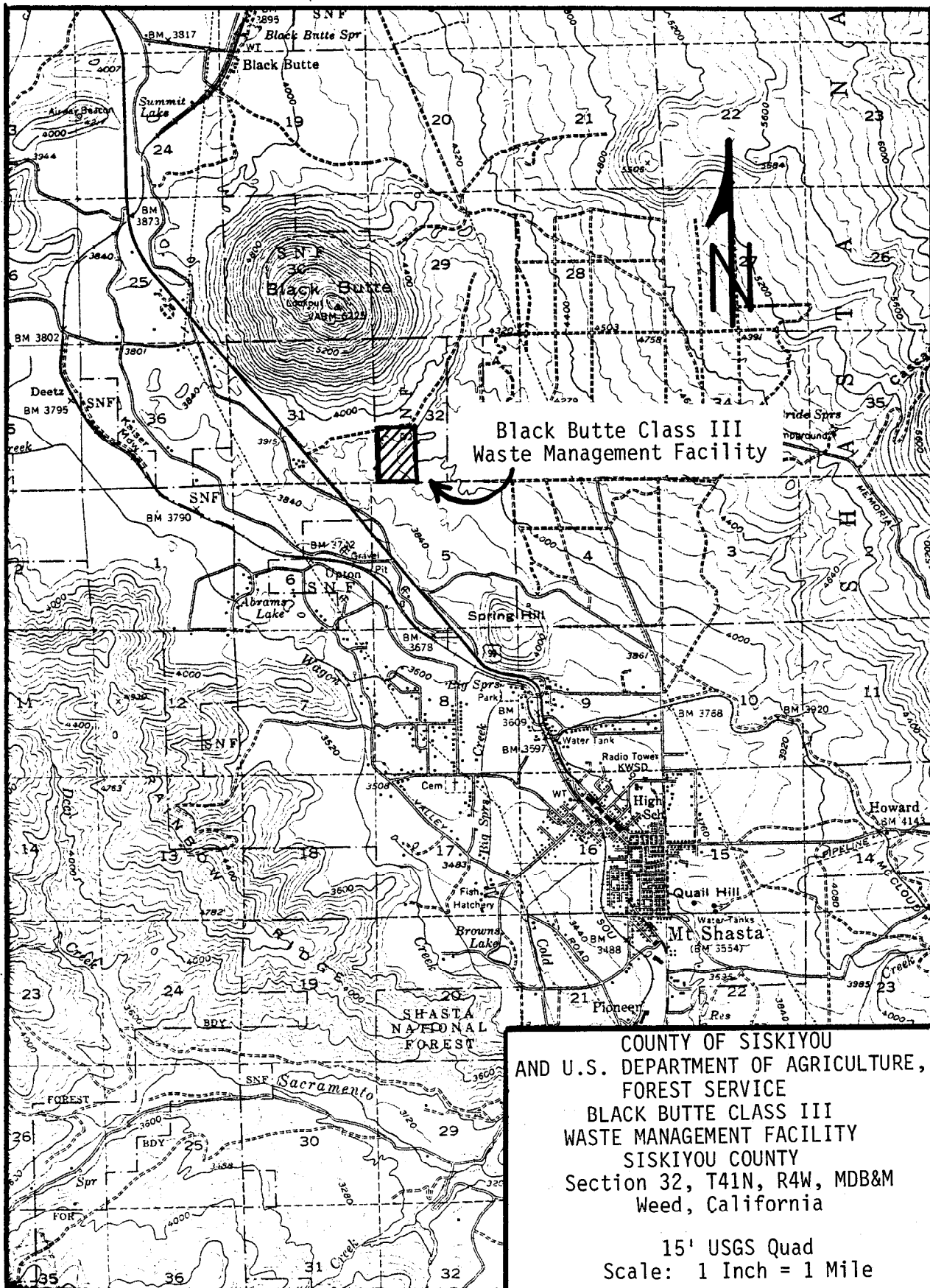
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The SWAT report, dated June 1988, indicates there is no off-site migration of hazardous waste. However, the report does indicate that concentrations of constituents in the downgradient well exceed those of the upgradient well. This is an indication that ground water may be impacted from leachate generated in the waste pile.

The average annual rainfall at the site is approximately 37 inches while the mean annual evaporation is approximately 35 inches, resulting in a net evaporation of -2 inches per year.

GDD:glN 10/4/89



ATTACHMENT "B"

